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Impact of international pollution convention . . .

New hazardous materials labels . . .

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Admiral C. R. Bender, USCG
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COVERS

FRONT COVER: The M/V *William R. Roesch* is one of several newly built ships now in operations on the Great Lakes. This vessel is 630 feet in overall length and can turn 16 m.p.h. with her shaft horsepower of 5,400. *Courtesy American Ship Building Co.*

BACK COVER: The importance of adequate ventilation in compartments which men are to work in can hardly be overemphasized. *Poster courtesy National Safety Council.*

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THE IMPACT OF THE 1973 IMCO CONVENTION ON THE MARITIME INDUSTRY

By William M. Benkert¹ and Douglas H. Williams²

ED. NOTE: In the February 1974 issue of the Proceedings appeared an article and accompanying table highlighting the International Convention for the Prevention of Marine Pollution, 1973. Because of the importance of this topic, the following article is reprinted from the January 1974 Marine Technology, copyright 1974 by the Society of Naval Architects and Marine Engineers and reprinted by special permission of copyright owner.

Introduction

In October, official delegations from the United States and seventy other nations met at Church House in London under the auspices of the Intergovernmental Maritime Consultative Organization (IMCO), a specialized agency of the United Nations, to negotiate a new International Convention for the Prevention of Pollution from Ships, 1973. This Convention, when it enters into force, will supersede the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended, and will regulate discharges of oil and harmful substances other than oil, including noxious chemicals, sewage, and garbage. It broadly addresses the problem of prevention of pollution of the marine environment by ships and contains technical regulations including both operational discharge standards and design and construction standards for tankers and other vessels. Appended to this paper is a table comparing certain major features of this Convention with those of the 1954 Convention.

The new Convention is one of a series of international agreements developed since 1969 under the auspices of IMCO. Each of these agreements is a constituent of a comprehensive scheme for the international control of maritime sources of ocean pollution. The 1969 Intervention Convention authorizes a government to intervene in cases of maritime casualties on the high seas involving oil, if that nation's coastlines or related interests are endangered. The 1969 Civil Liability Convention assigns strict liability to the owner of the vessel carrying oil, limiting his total liability for a single incident to \$14 million unless the incident was the result of the "actual fault or privity of the owner," in which case his liability is unlimited. The 1971 Compensation Fund Convention creates an international fund, financed through contributions

levied on contracting nations which receive oil, to provide "compensation for pollution damage to the extent the protection afforded by the Liability Convention is inadequate." The 1972 Ocean Dumping Convention prohibits or closely regulates the deliberate disposal at sea of certain dangerous or potentially dangerous substances. In addition to existing and prospective IMCO agreements, a forthcoming Conference on the Law of the Sea may negotiate a convention which will address marine pollution resulting from exploration and exploitation of the seabed.

It is within the context of these several agreements, intended to provide an international framework for the control of marine pollution and its consequences, that the purpose of the 1973 Convention should be viewed. The main objective of the International Conference on Marine Pollution in October, at which the new Convention was negotiated, was ". . . the achievement by 1975 if possible, but certainly by the end of the decade, of the complete elimination of the willful and intentional pollution of the seas by oil and noxious substances other than oil, and the minimization of accidental spills . . ." [(IMCO Assembly Resolution A.237(VII)]. The 1973 Convention substantially fulfills this objective, particularly with respect to operational discharges from ships, and complements the agreements discussed more comprehensively than the 1954 Convention which it will supersede.

The Convention consists of the Articles, which establish the general obligations of the signatory governments, and a set of technical annexes containing regulations which set forth specific standards, requirements, and prohibitions. Annex I contains regulations for the prevention of pollution by oil. Annex II deals with pollution by noxious liquid substances other than oil carried in bulk. Annex III covers harmful substances carried in packages, containers, portable tanks, or road and rail tank wagons, and Annexes IV and V regulate discharges of sewage and garbage from ships, respectively.

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General obligations

The Convention applies to ships flying the flag or operating under the authority of a party to the Convention. "Ship" means a vessel of any kind operating in the marine environment, including hydrofoil boats, air-cushion vehicles, submersibles, floating craft, and fixed or floating platforms. It does not apply to any warship, naval auxiliary, or other ship owned or operated by a state and used, for the time being, only on government noncommercial service. So far as is reasonable and practicable, however, these ships are required to act in a manner consistent with the Convention, without impairing their operations or operational capabilities.

Any violation of the requirements of the Convention must be prohibited and subject to sanction under the law of the flag state of the ship wherever the violation occurs. If the flag state is informed of a violation and is satisfied that sufficient evidence is available, it must institute proceedings as soon as possible in accordance with its law. A violation within the jurisdiction of any party to the Convention must be prohibited and sanctions established under the law of that party. In this event, the party must either institute proceedings under its own law or furnish evidence of the violation to the flag state of the ship. Any penalty established by the flag state or other party must be adequate in severity to discourage violations and equally severe regardless of where the violations occur.

Ships required to hold a certificate verifying compliance with construction and equipment requirements of the regulations are subject to inspection while in ports or off-shore terminals under the jurisdiction of a party to the Convention. This inspection is limited to verifying that there is a valid certificate on board, unless there are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the certificate. In this event, the party carrying out the inspection must ensure that the ship does not sail until it can proceed to sea without presenting an unreasonable threat of harm to the marine environment, except to proceed to the nearest appropriate repair yard available. All parties must apply the requirements of the Convention to the ships of nonparties as necessary to ensure that more favorable treatment is not afforded to such ships.

A ship may also be subject to inspection in a port or off-shore terminal of a party to the Convention for the purpose of verifying whether the ship has discharged any harmful substances in violation of the regulations. If a party notifies the flag state of the ship of a violation, the flag state must conduct a prompt investigation. If it is satisfied that sufficient evidence is available, the flag state must initiate proceedings against the ship and inform the party reporting the violation of any action taken.

The Convention requires that all possible efforts be made to avoid a ship being unduly detained or delayed

as a result of any of the foregoing inspection or enforcement proceedings. If a ship is unduly detained or delayed, it is entitled to compensation for any loss or damage suffered.

A report of an incident involving the actual or probable discharge of a harmful substance into the sea must be made without delay in accordance with the provisions of the Convention. The master of a ship, in general, must report the particulars of an incident to the appropriate officer or agency of a party to the Convention, using the fastest channels available at the time. That party must relay the report without delay to the flag state of the ship and to any other state which may be affected by the incident.

Annexes I and II, regulating oil and noxious liquid substances in bulk, respectively, are mandatory for all parties to the Convention. Annexes III, IV, and V are optional. Each annex must be accepted as a whole, so that no reservations are allowed to particular regulations in the optional annexes and no reservations of any kind are allowed with respect to the mandatory annexes. The Convention and the mandatory annexes enter into force twelve months after fifteen states, representing at least fifty percent of the gross tonnage of the world's merchant shipping, have become parties to the Convention. An optional annex enters into force twelve months after the same conditions have been satisfied with respect to that annex. Any dispute which arises between parties concerning the application or interpretation of the Convention must be submitted to arbitration upon request by any of them, if agreement has not otherwise been reached.

The Convention may be amended either after consideration by an appropriate body of IMCO or by a Conference of parties. An amendment to an article must be expressly accepted by two-thirds of the parties, representing at least fifty percent of the gross tonnage of the world's merchant fleet. An amendment to an annex may be accepted by a tacit procedure requiring *objection* by at least one-third of the parties or by parties representing at least fifty percent of the gross tonnage of the world's merchant fleet, unless the appropriate body determines that acceptance shall be by the same express procedure required for an amendment to an article. An amendment to an appendix to an annex is subject to acceptance by the tacit procedure.

International oil pollution

It is a generally accepted proposition that although vessel accidents receive sensational publicity and cause severe local pollution, the quantity of oil discharged annually from tankers and other ships during routine operations is far greater than the amount of oil lost as a result of vessel casualties. A recent analysis of available estimates of these quantities indicates that about 1,370,000 tons of oil are discharged into the sea each year during routine operations of tankers and other ships; vessel accidents

contribute about 350,000 tons.³ The major operational sources are tank cleaning, discharge of dirty ballast water, and discharges from ships' bilges.

The regulations contained in Annex I of the new Convention intended to control discharges of oil from ships apply to the full range of petroleum oils, broadly defined as "petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products . . ." (Petrochemicals are categorized as noxious liquid substances in bulk and are subject to the provisions of Annex II of the Convention). This broad definition is a major advancement in the international regulation of discharges of oil since the 1954 Convention applied only to persistent oils and imposed no restrictions on the discharge of lighter refined petroleum products, which may be more toxic to marine organisms.

Provisions for the control of discharge of oil into the sea prohibit such discharge unless several conditions are satisfied. An oil tanker must be underway and not within a "special area." A special area means a sea area where, for recognized technical reasons relating to its oceanographical and ecological condition and to the particular character of its traffic, the adoption of special mandatory pollution prevention methods is required. The tanker must be more than 50 miles from the nearest land, and the instantaneous rate of discharge of oil content must not exceed 60 liters per mile. The total quantity of oil discharged into the sea must not exceed for existing tankers 1/15,000 and for new tankers 1/30,000 of the total quantity of the particular cargo of which the residue formed a part (the term "new ship" is discussed later in this paper). Finally, the tanker must have in operation, with certain limited exceptions, an oil discharge monitoring and control system and a slop tank arrangement as required by the regulations.

A ship of 400 gross tons or more other than an oil tanker may discharge only if it is underway more than twelve miles from the nearest land and not within a special area. The oil content of the effluent must be less than 100 parts per million, and the ship must have in operation an oil discharge monitoring or control system, oily water separating equipment, oil filtering system, or other installation as required by the regulations. Discharges from the machinery space bilges of an oil tanker, excluding cargo pump room bilges, must also meet these requirements unless mixed with oil cargo residue. A ship of less than 400 gross tons must be equipped as far as reasonable and practical with installations to ensure the storage of oil residues on board for discharge to reception facilities or into the sea in accordance with the requirements for larger ships.

Whenever visible traces of oil are observed on or below

³ Charter, Daniel B., Sutherland, Richard A., and Porricelli, Joseph D., "Quantitative Estimates of Petroleum to the Oceans," presented to the Workshop on Inputs, Fates, and Effects of Petroleum in the Marine Environment, Ocean Affairs Board of the National Academy of Sciences, National Research Council, May 21-25, 1973.

the surface of the water in the immediate vicinity of a ship or its wake, governments of parties to the Convention, to the extent they are reasonably able to do so, should promptly investigate the facts bearing on the issue of whether there has been a violation of the Convention. This investigation should take into account, in particular, the wind and sea conditions, the track and speed of the ship, other possible sources of the visible traces, and any relevant oil discharge records.

Under the requirements of the Convention, the government of each contracting party undertakes to ensure the provision of reception facilities at oil loading terminals, repair ports, and other ports in which ships have oil residues to discharge. Governments may provide facilities directly but are not obligated to do so. They may also employ legislation, subsidization, tax incentives, or other means to promote the provision of facilities by port authorities or other parties. These facilities must be adequate for the reception of residues and oily mixtures from oil tankers and other ships in order to meet their needs without causing them undue delay. The regulations establish the types of ports where facilities are required and the required capacities. Facilities must be provided by 1 January 1977 or one year after entry into force of the Convention, whichever is later.

While an oil tanker or any ship of 400 gross tons and above other than an oil tanker is within a special area, any discharge into the sea of oil or oily mixture is prohibited. These ships must retain on board all oil drainage and sludge, dirty ballast, and tank washing waters for discharge only to reception facilities. The regulations carefully delimit the Mediterranean Sea area, the Baltic Sea area, the Black Sea area, the Red Sea area, and the "Gulfs area" (Persian Gulf and Sea of Oman) as special areas for oil pollution prevention purposes and establish uniform operational requirements in these areas. The regulations also contain explicit requirements for the provision of adequate reception facilities in these areas.

Requirements for the control of the discharge of oil, either within or outside special areas, do not apply to a discharge into the sea of oil or oily mixture necessary for the purpose of securing the safety of a ship or saving life at sea, a discharge resulting from damage to a ship or its equipment, or a discharge of substances containing oil being used to combat specific pollution incidents in order to minimize the damage from pollution. In the case of damage to a ship or its equipment, all reasonable precautions must have been taken after the occurrence of the damage or discovery of the discharge in order to prevent or minimize the discharge, and the owner or master must have acted neither with intent to cause damage nor recklessly and with knowledge that damage would probably result.

The new Convention establishes vessel construction standards, not contained in the 1954 Convention, to

complement operation discharge standards as a means of controlling routine operational discharges of oil. Although construction standards cannot entirely eliminate the need for operational discharge standards, they offer two fundamental and important advantages over the latter. First, adherence to an operational discharge standard in many cases relies heavily upon human judgment, since discharges of oily mixtures must be carefully monitored to control oil content and rate of discharge. Unless a law enforcement officer skilled in vessel operations is placed on every ship, we must rely upon the diligence and integrity of vessel masters, who operate within severe competitive constraints. A vessel construction standard, however, such as segregated ballast spaces or tanks for the retention of oily wastes on board, greatly reduces reliance upon human judgment. Control of operational discharges is essentially built into the vessel, minimizing critical monitoring functions. Second, it is far more difficult to demonstrate a violation of an operational discharge standard than of a vessel construction standard. In the former case, an enforcement agency must document the unlawful discharge, establish the oil content and rate of discharge, and prove that it was not a legal exception, effectively requiring that an officer be on scene at the time of the discharge to obtain photographs, samples, and other evidence, which is rarely practical on the high seas. Violation of a vessel construction standard, on the other hand, would generally be detectable at any time in port by boarding and inspecting the vessel.

For reasons of safety, ship controllability, ship habitability, and propulsive efficiency, a tanker empty of cargo on a voyage from her discharge port to the loading port must take aboard certain quantities of ballast water. Segregated ballast capacity reduces or eliminates the need to put ballast water into tanks previously filled with oil cargo, greatly alleviating the problem of treating or disposing of oily ballast water or residues. All tankers, however, including those operating with segregated ballast, must periodically wash their cargo tanks to avoid the buildup of sludge, to avoid contamination when changing cargo grade from one voyage to the next, and to provide clean tanks prior to entering a shipyard. Tank washing residues and other oily mixtures not eliminated by vessel design and construction must be discharged into the sea in accordance with the requirements of the Convention, retaining any remainder for discharge to reception facilities.

An important provision of the Convention requires that every new oil tanker, including combination carriers and any chemical tanker carrying oil cargo, of 70,000 tons deadweight and above be provided with segregated ballast tanks. The capacity of the segregated ballast tanks must be so determined that the ship can operate safely on ballast voyages without normal recourse to the use of oil tanks for water ballast. In any case, this capacity must

be at least such that in any ballast condition at any part of the voyage, including the conditions consisting of only lightweight plus segregated ballast, the ship's drafts and trim can meet all the following requirements:

1. the molded draft amidships (dm) in meters (without taking into account any ship's deformation) must not be less than:

$$dm = 2.0 + 0.02 L$$

where L is 96 percent of the total length on a waterline at 85 percent of the least molded depth measured from the top of the keel, or the length from the fore side of the stem to the axis of the rudder stock on that waterline, whichever is greater;

2. the drafts at the forward and after perpendiculars must correspond to those determined by the draft amidships (dm) in association with the trim by the stern of not greater than $0.015 L$; and

3. in any case, the draft at the after perpendicular must be sufficient to obtain full immersion of the propeller or propellers.

Ballast water may be carried in oil tanks only in weather conditions so severe that, in the opinion of the master, it is necessary for the safety of the ship to carry additional ballast water in oil tanks. This additional ballast water must be processed and discharged in accordance with the operational discharge requirements of the Convention.

New segregated-ballast tankers represent a major component of the set of provisions and requirements of the Convention which will substantially meet the objective of the Conference, as noted above, i.e., ". . . the achievement by 1975 if possible, *but certainly by the end of the decade*, of the willful and intentional pollution of the seas by oil . . ." (emphasis added). In order to meet this objective, regardless of how quickly the Convention achieves sufficient ratification (at least 15 states representing at least 50 percent of the gross tonnage of the world's merchant shipping), the requirement for new segregated-ballast tankers is not tied to the entry into force of the Convention. The definition of "new ship" contained in the regulations is expressed in terms of calendar dates falling within this decade. A "new ship" means a ship:

1. for which the building contract is placed after 31 December 1975; or
2. in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 30 June 1976; or
3. the delivery date of which is after 31 December 1979; or
4. which has undergone a major conversion:
 - a. for which the contract is placed after 31 December 1975; or
 - b. in the absence of a contract, the construction work of which is begun after 30 June 1976; or
 - c. which is completed after 31 December 1979.

This provision means that shipping companies and shipbuilders have a strong incentive to implement the segregated ballast requirements in accordance with the dates prescribed, regardless of when the Convention enters into force. They will wish to avoid waiting until entry into force, should it be after the dates prescribed, and the consequent retrofitting of vessels not constructed in compliance with the Convention.

All oil tankers, including segregated ballast tankers, are required by the Convention to be capable of retaining oily mixtures or residues on board for discharge into the sea under the standards and requirements of the Convention or for discharge to reception facilities. Discharge into the sea requires the use of "retention on board" (ROB) techniques. Tankers must be provided with adequate means for cleaning the cargo tanks and transferring the dirty ballast residue and tank washings from the cargo tanks into a slop tank. The capacity of the slop tank or combination of slop tanks must be sufficient to retain all slops and residues, provided the total capacity is not less than three percent of the oil-carrying capacity of the ship. In the case of a segregated-ballast tanker or a tanker not fitted with arrangements such as educators involving the use of water additional to the washing water, a slop tank capacity of two percent of the oil-carrying capacity of the ship may be acceptable. New oil tankers of more than 70,000 tons deadweight must be provided with at least two slop tanks.

The Convention further requires that all tankers be fitted with an approved oil discharge monitoring and control system. For enforcement purposes, this system must be provided with a recording device to produce a continuous record of the discharge in liters per nautical mile and total quantity discharged or of the oil content and rate of discharge. It must come into operation when there is any discharge of effluent into the sea and ensure that any discharge of oily mixture is stopped automatically when the instantaneous rate of discharge of oil exceeds that permitted by the Convention. Tankers must also be provided with effective detectors for a rapid and accurate determination of the oil-water interface in slop tanks.

These provisions for the implementation and enforcement of effective ROB procedures are subject to two important qualifications. First, the requirements for slop tank arrangements and oil discharge monitoring and control systems do not apply to existing tankers (i.e., any tanker not defined as a new tanker) until three years after the Convention enters into force. Second, when IMCO finds that equipment required by the Convention for the monitoring of the discharge of light refined products ("white oils") is not obtainable, compliance with this requirement may be waived. In this event, discharge is permitted only in accordance with procedures established by IMCO to satisfy all the discharge requirements

except the obligation to have an oil discharge monitoring and control system in operation.

The Convention requires certain pumping, piping, and discharge arrangements on oil tankers for the discharge of oily mixtures or residues to reception facilities or of effluent to the sea. In every oil tanker, a discharge manifold for connection to reception facilities for the discharge of dirty ballast water or oil-contaminated water must be located on the open deck on both sides of the ship. Pipelines for the permissible discharge of effluent to the sea must lead to the open deck or to the ship's side above the waterline in the deepest ballast condition. New oil tankers must be provided with means for stopping the discharge of effluent into the sea from a position on the upper deck or above located so that the manifold and the effluent may be visually observed. Means for stopping the discharge need not be provided at the observation position if positive communication, such as a telephone or radio system, is provided between the observation position and the discharge control position. With certain limited exceptions, operational discharges must take place above the waterline in order to allow observation of the effluent.

Any ship of 400 gross tons or above must be fitted with an oily water separating or filtering system capable of producing an effluent with an oil content of not more than 100 parts per million. A ship of 10,000 gross tons or above must also be fitted with an oil discharge monitoring and control system or, in lieu of these requirements, with an oily water separating system and an effective filtering system producing an effluent with an oil content not exceeding fifteen parts per million. Ships of less than 400 gross tons must be equipped, as far as practicable, to retain on board oil or oily mixtures or to discharge them in accordance with the regulations of the Convention. These requirements do not apply to existing ships until three years after the date of entry into force of the Convention. Every ship of 400 gross tons and above must also be provided with a tank or tanks of adequate capacity to receive oily sludges which cannot be dealt with otherwise in accordance with the regulations, such as those resulting from the purification of fuel and lubricating oils and oil leakages into the machinery spaces. In new ships, these tanks must be designed and constructed so as to facilitate their cleaning and the discharge of residues to reception facilities.

The Convention requires that every oil tanker of 150 gross tons and above and every ship of 400 gross tons and above other than an oil tanker be provided with an Oil Record Book in a form specified in an appendix to the regulations. An entry must be made in the Oil Record Book whenever certain oil-handling operations take place in an oil tanker. These operations include, *inter alia*, the loading, unloading, or internal transfer of oil cargo, ballasting or cleaning of cargo tanks, discharge of ballast or water from slop tanks, and discharge of bilge water.

Entries for ships other than tankers include ballasting or cleaning, of fuel oil tanks, or oil cargo spaces, discharge of ballast or cleaning water, disposal of residues, and discharge of bilge water. Entries are also required for exceptional or accidental discharges of oil. The Oil Record Book must be readily available for inspection at all reasonable times. The government of a party to the Convention may inspect the Oil Record Book on board any ship to which the regulations apply while the ship is in its port or offshore terminal.

Fixed and floating drilling rigs and other platforms are included within the definition of a ship and must in general comply with the requirements of Annex I applicable to ships of 400 gross tons and above other than oil tankers. Exceptions to these requirements are that such platforms must be equipped as far as practicable with oil discharge monitoring and control systems, oily water separating equipment, and sludge tanks; they must keep a record of all operations involving the discharge of oil or oily mixtures; and in any special area, the discharge into the sea of oil or oily mixture is prohibited except when the oil content of the discharge without dilution does not exceed fifteen parts per million.

Accidental oil pollution

In addition to the restrictions placed upon operational discharges, the Convention contains limited provisions for the minimization of accidental discharges. The regulations essentially incorporate the 1971 amendments to the 1954 Convention establishing requirements relating to cargo tank arrangements and limitation of tank size in oil tankers. These requirements are based on specified damage assumptions and methods of calculation of the hypothetical oil outflow. Basically, cargo tanks of oil tankers must be of such size and arrangement that the calculated hypothetical outflow anywhere in the length of the ship does not exceed 30,000 cubic meters of $400 \sqrt{DW}$ (where DW is the deadweight of the ship as defined in the regulations), whichever is greater, subject to a maximum of 40,000 cubic meters. Various further limits are placed on the absolute volumes and sizes of wing and center cargo tanks.

There is, however, an important difference between the application of these provisions of the Convention and the application of the same provisions in the 1971 amendments. The Convention requirements apply to all new oil tankers upon entry into force and to existing oil tankers within two years after entry into force if such a tanker falls into either of the following categories:

1. a tanker, the delivery date of which is after 1 January 1977; or
2. a tanker to which both the following conditions apply:
 - a. delivery date is not later than 1 January 1977 and
 - b. the building contract is placed after 1 January 1974, or in cases where no building contract has

previously been placed, the keel is laid or the tanker is at a similar stage of construction after 30 June 1974.

The corresponding building contract and keel-laying dates contained in the 1971 amendments, which have not yet received sufficient ratifications to enter into force, were 1 January 1972 and 30 June 1972, respectively. The earlier dates contained in the 1971 amendments effectively remain controlling for implementation of the tank size and arrangement requirements. Faced with the prospect of these amendments, shipowners are already constructing tankers in compliance with the requirements to avoid costly retrofitting.

To protect the marine environment further in the event of damage to oil tankers, provisions were adopted in the Convention specifying bottom and side damage assumptions which tankers in the fully or partially loaded condition must be capable of surviving. In general, required stability in the fully loaded condition must be ensured by means of structural arrangement of cargo tanks. In a partially loaded condition, required stability may be provided by means of appropriate loading arrangements, as prescribed in an operating manual.

The foregoing measures for minimizing accidental pollution from oil tankers mean that naval architects must consider three independent sets of constraints in the design and construction of a new tanker. First, there is the traditional consideration of weight distribution for the minimization of stress over the length of the vessel. Second, account must be taken of the arrangement and limitation of size of cargo tanks in order to minimize hypothetical oil outflow due to side and bottom damage. Third, tank arrangements must also meet the subdivision and stability requirements in order to enhance tanker survivability in the event of damage. In any particular case, these separate design constraints may or may not be readily compatible. But they are a result of international concern both for the safety of life and property at sea and for the protection and enhancement of the marine environment.

At the October Conference, the United States proposed a further measure intended to minimize accidental pollution, requiring that new tankers of less than 70,000 tons deadweight be fitted throughout the cargo length with a double bottom of a height of $B/15$ or two meters, whichever is less. This proposal was rejected overwhelmingly as a mandatory accident feature, as it had been similarly rejected as a mandatory means of partially implementing segregated ballast requirements. Credit is allowed, however, for the minimum depth of a double bottom in the calculation of hypothetical outflow of oil in the event of bottom damage as a basis for requirements for the arrangement and limitation of size of cargo tanks. The question of whether double-bottom requirements for tankers will be imposed unilaterally by the United States,

either solely on U.S. vessels or on both U.S. vessels and foreign vessels entering U.S. ports, will now be open to very careful consideration. The benefits to be gained for the enhancement of U.S. waters must be carefully weighed against the economic disadvantages which may arise for the U.S. merchant marine or the American consumer.

Noxious liquid substances

Annex II of the Convention contains regulations for the control of pollution by noxious liquid substances in bulk and applies to all ships carrying these substances in bulk. An appendix to Annex II lists the substances which have been evaluated and categorized according to the hazard they present to either marine resources or human health or the harm they cause to amenities or other legitimate uses of the sea. (Another appendix lists those substances which were evaluated and considered to present no harm to human health or the marine environment when discharged into the sea.) The designated noxious liquid substances are divided into four categories ranging from Category A substances presenting a major hazard or causing serious harm to Category D substances presenting a "recognizable" hazard or causing minimal harm. If it is proposed to carry a liquid substance in bulk which has not been evaluated and categorized, the governments of parties to the Convention involved must establish and agree on a provisional assessment for the proposed operation on the basis of guidelines contained in the annex. Until full agreement is reached, the substance must be carried under the most severe conditions proposed.

The regulations provide general requirements for the discharge of noxious liquid substances into the sea and are supported by Conference Resolution 4, which recommends that IMCO provide a uniform basis for contracting governments to approve the procedures and arrangements for such discharges, ensuring that the concentration and rate of discharge of the effluent is such that a specified concentration of the substance in the wake of the ship is not exceeded. The Conference anticipated that this matter would be studied and resolved prior to the entry into force of the Convention. The regulations further provide measures for the control of noxious liquid substances with respect to tank cleaning and emptying, piping system draining, and so forth. If a contracting party deems it necessary, these operations on board a vessel, while in port, may be subject to the surveillance and approval of an authorized surveyor. Special discharge requirements and measures of control are provided for within special areas for the prevention of pollution by noxious liquid substances. These special areas are the Baltic Sea and Black Sea areas.

Ships carrying noxious liquid substances in bulk must be designed, constructed, equipped, and operated so as to minimize the uncontrolled discharge of these substances into the sea. The government of each party is responsible for the promulgation of requirements for the

design, construction, equipment, and operation of such ships. The requirements issued for chemical tankers must contain at least all the provisions of the Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk as adopted by IMCO.

The optional annexes

Annex III of the Convention contains regulations for the prevention of pollution by harmful substances carried by sea in packaged forms, or in freight containers, portable tanks, or road and rail tank wagons. These regulations establish general requirements regarding the packaging, marking and labeling, documentation, stowage, and quantity limitations of harmful substances and the notification of port authorities of the intent to load or unload such substances at least 24 hours in advance. The government of each party to the Convention must issue detailed requirements to supplement these provisions. Annex IV contains regulations for the prevention of pollution by sewage from ships, applying to new and existing ships over 200 gross tons carrying more than ten persons. The regulations do not come into effect for existing ships until ten years after entry into force of this annex. Sewage discharged into the sea within four miles of the nearest land must be treated according to standards and test methods developed by IMCO. Between four and twelve miles from the nearest land, sewage must be comminuted before discharge into the sea. Beyond twelve miles, no treatment or maceration is required. A contracting state may impose sewage discharge standards in waters under its jurisdiction less severe than those specified in the annex.

Annex V contains regulations for the prevention of pollution by garbage from ships. The Mediterranean Sea, Baltic Sea, Black Sea, Red Sea, and "Gulfs" areas are special areas where only food wastes may be discharged and only when a ship is at least twelve miles from the nearest land. States bordering these areas must provide facilities adequate for the reception of other garbage. Outside special areas, dunnage and packing materials that float may be disposed of into the sea at least 25 miles from the nearest land. Food wastes and other garbage may be disposed of at least twelve miles from the nearest land; if they are comminuted or ground, these wastes may be disposed of three miles or more from land. Fixed and floating platforms may dispose only of comminuted food wastes into the sea within a 500-meter radius of the platform, when located more than twelve miles from land.

Relationship to the Ports and Waterways Safety Act of 1972

Title II of the Ports and Waterways Safety Act of 1972 requires the promulgation of rules and regulations establishing minimum standards of design, construction, alteration, and repair of vessels carrying certain liquid cargoes in bulk, including oil and hazardous substances, for the purpose of protecting the marine environment. The Act

provides for the consideration of international agreements regarding protection of the marine environment and the promulgation of domestic rules and regulations consonant with such agreements. The new Convention will in all probability become the internationally accepted standard for the prevention of pollution from ships, and it must be evaluated in terms of the degree to which it meets the goal of the Ports and Waterways Safety Act to provide protection for U.S. waters.

If certain regulatory provisions of the Convention are found not to be fully adequate for domestic needs, then the United States may be faced with the prospect of introducing additional requirements, as alluded to in the foregoing, for vessels entering U.S. ports. However, unilateral action in such an aspect as vessel construction presents certain intrinsic dangers. First, it might place the U.S. merchant marine at an economic disadvantage vis-a-vis foreign vessels operating in foreign trade. Second, it would be likely to impede ratification of the Convention by other nations. Third, unilateral action by the United States could encourage the proliferation of differing regulatory schemes unilaterally imposed by other nations. It was a central article of faith at the Conference, in abandoning inclusion of an article formally limiting unilateral action, that signatory nations would act responsibly in substantial conformance with the provisions of the Convention.

As this article goes to press, only two weeks have elapsed since the conclusion of the Conference. It is too early to be able to fully evaluate the effect of the Convention in regard to domestic legislation.

In our evaluation we should note that the Conference, recognizing that the new Convention deals with the problem of accidental pollution only to a limited extent, adopted a Resolution recommending that the International Maritime Consultative Organization (IMCO) continue its work with a high priority on the development of measures for the minimization of accidental spillages. The Resolution specifically cites measures regarding safe navigational procedures and traffic separation schemes, watchkeeping practices and the training and certification of seamen, provision of modern navigational and commu-

nications equipment, operational procedures during cargo transfer, maneuverability and controllability of large ships, and construction and equipment of ships carrying oil or noxious substances. This Resolution, in effect, shapes the work program of the technical committees of IMCO for the immediate future.

It is important to bear in mind in this regard that the Convention contains provisions for the rapid, tacit amendment of the technical annexes. These provisions will facilitate the timely adoption of the work product of the IMCO technical committees, such as the measures contemplated by the Resolution just described. The implementation of multilateral decisions through the rapid amendment procedures provides the means of revising the Convention if, in the future, it should be found insufficient for its intended goal of reducing pollution of the sea.

Conclusion

The new International Convention for the Prevention of Pollution from Ships, 1973, as adopted at the October Conference, will clearly have a significant impact on the shipbuilding and maritime transportation industries, almost certainly even before it enters into force. The segregated-ballast provisions, in particular, are a major achievement of the Conference and will be implemented in time to make an important stride toward the goal of eliminating intentional pollution by the end of the decade. The measures adopted for the minimization of accidental pollution from oil and chemical tankers demonstrate that maritime safety and the protection of the marine environment are both important considerations in the design and construction of ships.

This Convention is part of a continuing effort by all nations to achieve a comprehensive and international solution to the worldwide problem of marine pollution. It represents an increasing awareness that the welfare of life itself depends very directly upon the quality of the ocean environment. We feel that the measures adopted in this Convention for both the prevention of intentional pollution and the minimization of accidental pollution are major steps toward the preservation and enhancement of the seas.

Topic	1954 Convention (as amended in 1962)	1973 Convention
Applicability as regards carriage of oil	<ol style="list-style-type: none"> 1. Seagoing tankers over 150 gross tons 2. Other seagoing ships over 500 gross tons..... 	<ol style="list-style-type: none"> 1. All tankers over 150 gross tons. 2. All other ships over 400 gross tons including novel craft and fixed and floating platforms.
Dispute settlement	<ol style="list-style-type: none"> 1. Referred to International Court of Justice unless all parties agree to arbitration. 	<ol style="list-style-type: none"> 1. Compulsory arbitration by specially formed tribunals upon application of any party to dispute.
Amendment procedure	<ol style="list-style-type: none"> 1. Effective only upon specific acceptance via IMCO assembly and contracting States. 	<ol style="list-style-type: none"> 1. Speedier method for annexes and appendices via IMCO Committee and tacit acceptance procedures.
Survey and certification	<ol style="list-style-type: none"> 1. No comparable provision..... 	<ol style="list-style-type: none"> 1. Survey at 5-year intervals and at intermediate (mid period) intervals. 2. Equipment must be approved by Administration (monitors, filters, separators, interface detectors). 3. Administration issues certificate attesting to compliance by its ships, which certificate shall be accepted except when there are clear grounds to believe the ship is not in compliance.

Topic	1954 Convention (as amended in 1962)	1973 Convention
Definition of oil.....	<ol style="list-style-type: none"> Limited to crude, fuel, heavy diesel and lubricating oils.. Does not include bilge slops and fuel and lube oil purification residues. 	<ol style="list-style-type: none"> Includes all petroleum oils except petrochemicals (which are regulated by annex 11).
Discharge criteria in prohibited zones (this term does not appear in the 1973 Convention which uses a distance from land criterion).	<ol style="list-style-type: none"> Prohibits discharges by all ships in concentrations in excess of 100 parts per million within the prohibited zones. Prohibited zone generally 50 miles or greater from nearest land for tankers. Prohibited zone applies to other ships unless proceeding to a port not provided with adequate reception facilities. 	<ol style="list-style-type: none"> Prohibits discharges which leave visible traces unless it can be established by installed instruments that the concentration discharged was less than 15 parts per million. For tanker cargo slops, discharge is prohibited within 50 miles from nearest land. For other ships slops, and other tanker slops, discharge is prohibited within 12 miles from the nearest land.
Discharge criteria outside of the prohibited zones.	<ol style="list-style-type: none"> No restriction on discharges from a ship less than 20,000 gross tons. Vessels over 20,000 gross tons are limited to discharges whose concentrations are 100 parts per million or less, unless when in the opinion of the master, circumstances make it unreasonable or impractical to retain the higher concentrated slops on board. 	<ol style="list-style-type: none"> Tankers must meet all the following conditions: <ol style="list-style-type: none"> Ship is proceeding enroute. Discharge is limited to 60 liters per mile instantaneous rate. Total quantity discharged is limited to 1/15,000 of cargo last carried for existing tankers and 1/30,000 of cargo last carried for new tankers. Tanker bilges, except pump rooms, shall be treated same as other ships. Other ships must meet all of the following conditions: <ol style="list-style-type: none"> Ship is proceeding enroute. Oil content of the effluent must not exceed 100 parts per million.
Enforcement mechanism.....	<ol style="list-style-type: none"> No comparable provision..... 	<ol style="list-style-type: none"> Requires that the monitoring and control system be in operation and a permanent record made anytime oily effluent is being discharged, except for clean or segregated ballast.
Construction and equipment requirements to control operational discharges of oily mixtures.	<ol style="list-style-type: none"> No comparable provision..... 	<ol style="list-style-type: none"> Segregated ballast is mandatory for new tankers of 70,000 deadweight tons and greater, and is optional for tankers of less than 70,000 deadweight tons. Note that "new" tankers are defined by calendar dates and are therefore not dependent upon entry into force of this Convention. Retention of oil on board (LOT) is mandatory for all tankers. Mandatory installation of effluent monitor and control system, provision of slop tanks, and provision of oil/water interface detectors. Effluent must comply with discharge criteria or be transferred to reception facility. Other ships require sludge tank installations, oil water separator and/or filters dependent upon ship size.
Reception facilities.....	<ol style="list-style-type: none"> Provision to promote according to need of ships using ports. 	<ol style="list-style-type: none"> Expanded provision to undertake to insure availability and adequacy at oil loading ports, repair ports and at other ports according to the needs of ships.
Oil record book.....	<ol style="list-style-type: none"> Establishes basic requirement to provide oil record book and requires entries for specific operations. 	<ol style="list-style-type: none"> Expands requirements to provide entries for more specific operations and in greater detail to aid in enforcement.
Construction requirements to limit the amount of oil discharge in case of accidents.	<ol style="list-style-type: none"> No comparable provision..... 	<ol style="list-style-type: none"> Establishes damage assumptions and methods of calculation of the amount of hypothetical oil outflow for tankers. Establishes tank arrangement and size limitations for the cargo tanks of tankers. Establishes subdivision and damage stability criteria to be applied to tankers to increase survivability in the event of accident.
Additional annexes for substances other than oil. Annex II is mandatory and annexes III, IV and V may be adopted at the motion of contracting States.	<ol style="list-style-type: none"> No comparable provision..... 	<ol style="list-style-type: none"> Annex II details mandatory requirements for construction of chemical tankers and discharge criteria for liquid noxious substances in bulk. Annex III contains regulations for the prevention of pollution by harmful substances carried at sea in packaged form, or in freight containers, portable tanks of road and rail tank cars. Annex IV contains regulations for the prevention of pollution by sewage from ships. Annex V contains regulations for the prevention of pollution by garbage from ships.

NEW LABELS FOR HAZARDOUS MATERIALS TRANSPORTATION

By Phillip C. Olenik, Lieutenant (j.g.), U.S. Coast Guard Headquarters Office of Merchant Marine Safety, Cargo & Hazardous Materials Division.

A major change has recently taken place involving the shipping of hazardous materials. This change affects carriers and shippers alike. The old shipping labels for hazardous materials have been replaced by new, brightly colored, easy-to-identify labels which will be the subject of this article. Of course, you will have to use your imagination to visualize colors as presented here in black and white.

The basic differences between the old and new labels can be seen readily in figure 1. The old flammable liquid label is shown on the left while the new flammable liquid label is on the right. By comparison, the old label seems overcrowded with information, and not conducive to easy identification. The new labels can be recognized at greater distances due to their simpler design and bright colors and are understood by more people. These features, along with international acceptance of the new labels, make this regulation change a salutary one for all concerned.

On 27 February 1973 the Department of Transportation (DOT) adopted the United Nations recommendations for labeling of hazardous materials. These label recommendations are internationally accepted and therefore provide an advantage for export shipments. Under the old system a problem existed for exporters and importers of hazardous materials. For instance, a common problem was that shipments were denied entry into some foreign countries until the packages were relabeled according to United Nations standards. Although the new Department of Transportation labels are not identical to the United Nations labels, they comply with all of the United Nations recommendations, and therefore can be used in most countries. As you will see, the Department of Transportation labels have the basic information displayed on the United Nations label along with additional information required by the United States.

The United Nations labels have three characteristic features: the class number appearing at the bottom apex of the label; the color; and a symbol which depicts the hazard the commodity represents. All United Nations labels are the same shape. A class number is assigned to



Figure 1

DOT Classifications	United Nations class
Class A explosives	1
Class B explosives	1
Class C explosives	1
Flammable compressed gas	2
Nonflammable compressed gas	2
Flammable liquid	3
Flammable solid	4
Oxidizing material	5
Poisonous gas, Class A	2 or 6
Poisonous liquid, Class A	6
Poisonous liquid or solid, Class B	6
Irritating material	8
Etiologic agent	6
Radioactive materials	7
Corrosive material	8

Figure 2

each of the various classes of hazardous materials. The United Nations classes are nearly identical to the Department of Transportation classifications, and the class names used by the United Nations are similar to those used in this country. The class number is a new shorthand concept which will appear on United Nations labels but is optional on the Department of Transportation labels. Figure 2 shows the United Nations classifications and their class numbers.

Figure 3 is an example of the United Nations recommended labels for explosives. Note the three characteristics. The class number (1) appears at the lower apex; the color of the label is orange; the symbol is an exploding bomb. Among the United Nations labels, only those for radioactive materials deviate from this standard format. However, the United Nations recommendations allow any country or international organization to place additional information in the space between the pictorial symbol and the class number.

Figure 4 is an example of the Department of Transportation labels for explosives. Note that under Department of Transportation regulations the use of class number is optional. The use of certain additional information is required on each label, however. For example, the specific category of explosives (Explosive A, Explosive B, or Explosive C) as recognized in the United States must appear in the space below the exploding bomb symbol. The actual explosives labels will be orange, in accordance with United Nations recommendations.

In the United States the criteria for classifying a hazardous material and placing the proper label on it for water transportation purposes are presently contained in Title 46, Code of Federal Regulations, Part 146. Figure 5 shows the new Department of Transportation label for nonflammable gases. The actual label color is green. The pictorial symbol is a compressed gas bottle. The United Nations class number (2) represents compressed gases and is optional. It is interesting that the same class number pertains to flammable compressed gases, but the label is entirely different. In the case of flammable compressed gases, the label is red and the symbol is a flame.

**CLASS 1
EXPLOSIVES**

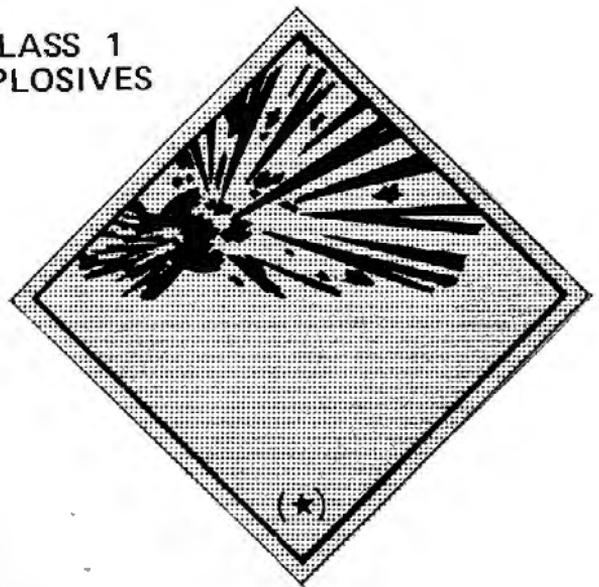


Figure 3

CLASS A



UN
CLASS 1

CLASS B



CLASS C



Figure 4

UN
CLASS 2



Figure 5

Figure 6 shows the new Department of Transportation labels for flammable solids, materials which become dangerous when wet, and materials which ignite spontaneously. Although each of these labels is considerably different in color and pattern, each bears the symbol of the flame. Under the United Nations recommendations any material which exhibits any one of these properties is required to have the appropriate label(s). For example, film made of nitrocellulose ignites very easily and once ignited burns rapidly; these are the criteria for flammable solid and the flammable solid label must be used. Another example is metallic sodium. Metallic sodium is a material which emits flammable gas when contacted by water; consequently, any package containing metallic sodium must be labeled with a "dangerous when wet" label under United Nations. The Department of Transportation's use of these labels is different from the United Nations'. For domestic shipment, even though a material is "dangerous when wet" or "spontaneously combustible", only the flammable solid label is required. The other two labels may be used *in addition* to the flammable solid label if the package is to be transported to another country where the use of these labels is required. The class number for all of these materials is 4, and this is optional on the Department of Transportation labels. The labels in Figure 6 are colored as follows: the flammable solid label has red vertical stripes superimposed on its white background; the "spontaneously combustible" label is red on the lower half and the upper portion is a white background; the "dangerous when wet" label is solid blue.



Figure 6



Figure 7

Figure 1 on page 64 shows the new flammable liquid label. Except for the class number (3), it is identical to the label for flammable compressed gases. To differentiate the different materials, the Department of Transportation requires the words "Flammable Gas" or "Flammable Liquid" beneath the flame symbol.

Figure 7 pictures the labels for oxidizing materials and organic peroxides, United Nations class 5. Although the United Nations recommends the same label for both types of materials, the Department of Transportation, in order to distinguish between the materials, requires the words "oxidizer" or "organic peroxide" on the respective labels. Both labels are yellow and have the symbol of the flaming circle at the top.

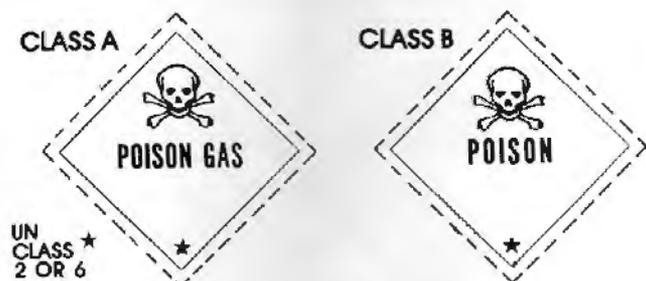


Figure 8

Figure 8 shows the labels for poison gas and poisons. These labels are both white and have the skull and crossbones symbol at the top. The poison gas label of figure 8a will have the class number 2, for compressed gases, if the shipper uses a class number. When a class number is applied to the poison label of figure 8b, the number 6, indicating poisons, class 6, is used.

In figure 9 you can see the Department of Transportation label for irritants (otherwise known as Class C poisons). Since irritants are treated by the United Nations as poisons, the United Nations recommendations include

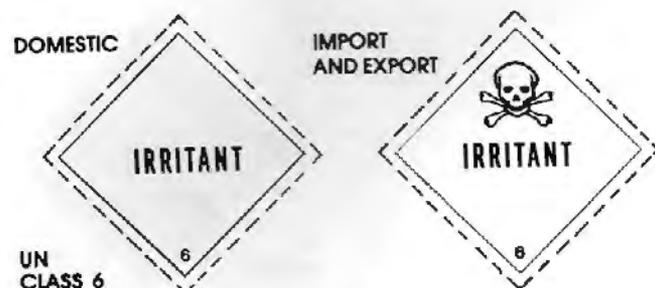


Figure 9

the skull and crossbones symbol, which would appear on an export label, along with the class number 6. The Department of Transportation label is very simple, having only the word "irritant" printed in red on a white background. The United Nations label is printed in black.

Figure 10 displays the three Department of Transportation labels for radioactive materials. These labels are not new, having been required Department of Transportation labels since 1969. For the "Radioactive White I" label pictured at left in figure 10, the United Nations recommends the color white, the trefoil symbol, Roman Numeral I and the following words: "Principal radioactive content"; and "Activity of content in curies". The class number, 7, is the same for all three radioactive labels. The radioactive yellow II and III labels displayed in Figure 10 (center and right respectively) yellow upper halves. Besides the Roman numerals II and III (which appear in red), there is also a space for the Transport Index, a quantity used to account for the radiation level.

The corrosives label shown in figure 11 is white on top and black on the bottom with the corrosives symbol in the upper half. If used, the class number is 8. This label is prescribed for both corrosive solids and corrosive liquids.

Finally, the label for etiologic agents (biomedical material such as infectious substances), appears in figure 12. This label does not follow United Nations recommendations, but is adopted from the U.S. Department of Health, Education, and Welfare (HEW) which until recently was the only Federal agency regulating these substances.

There is a United Nations infectious substances category of poisons Class 6, which is essentially etiologic agents, but to date, no information has been issued on the substances within this category. It is expected that when more definitive information is available, the label recommended by the United Nations for these materials will be the United Nations poison label. The Department of Transportation has adopted the Health, Education, and Welfare label as shown and this accounts for the rectangular shape in lieu of the traditional diamond shape. This rectangular label is used on domestic shipments. The coloring is red on a white background.

The new labels are authorized for immediate use. Except for explosives, as pointed out above, previously required labels may be used until 1 January 1975. Although the actual labels themselves have changed, the requirements for labeling have not, and these requirements can be found in Title 49 and Title 46 of the Code of Federal Regulations.

Persons interested in further information can obtain an excellent color brochure by writing:

U.S. Department of Transportation
Office of Hazardous Materials (TES-24)
Washington, D.C. 20590

There is no charge for the brochure in limited quantities. When requesting this material, ask for Chart 4, entitled "Newly Authorized Hazardous Materials Warning Labels." The chart neatly displays all of the labels as well as related information. †



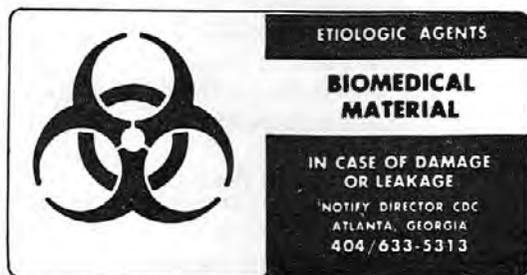
Figure 10



UN
CLASS 8

Figure 11

DOMESTIC



NOTE: For import
and export shipments
use Class B Poison Label

Figure 12

THE FUTURE MARITIME DISTRESS SYSTEM

Over the last several years, the Subcommittee on Radiocommunications of the Intergovernmental Maritime Consultative Organization (IMCO) has had under continuing study the "Future Maritime Distress System"; i.e., the ways in which various maritime radio elements can be coordinated to enhance the safety of life at sea. At the 11th meeting in March 1973, a paper was approved which set forth the system concepts for two time periods, near (next 10 years) and distant (10-20 years from now). In the near future, the improvements proposed relate to practical steps involving the more efficient and widespread use of present radio systems. The distant future system is intended to be an evolutionary development from the present, and as such will draw upon the near-term improvements and the rapidly evolving technological innovations impacting on maritime telecommunications. A maritime satellite system will be an important resource of the distant future distress system, as will be advanced and automated communications in the terrestrial maritime service.

This paper, which was subsequently adopted by the IMCO Assembly in November 1973, represents in large measure all of the positions set forth by the United States for the maritime distress system. As such, it is one more indication of the gains that can be achieved through the cooperative partnership of the U.S. Government Agencies and the American maritime industry in the IMCO arena.

The IMCO paper is reprinted below.

MARITIME DISTRESS SYSTEM

I. GENERAL INTRODUCTION

1. Definition

1.1 A maritime distress system is the coordinated use of various radio elements for the purpose of safety of life at sea.

1.2 The system is designed to serve the distress radiocommunications requirements of Convention ships.¹

The system will also serve any other craft properly equipped.

1.3 It provides for radiocommunications at various distances between those which may become involved in a distress incident.

1.4 The principal elements of the maritime distress system include:

- (i) stations participating in the maritime mobile service;
- (ii) frequencies/modes;
- (iii) equipment;
- (iv) procedures and regulations in force;

- (v) personnel; and
- (vi) organizations.

Radiocommunications in the maritime distress system include:

- (i) alerting;
- (ii) identifying;
- (iii) locating;
- (iv) coordinating and expediting assistance; and
- (v) on-scene communications.

2. Requirements

2.1 The system should comprise facilities for radiocommunications over all distances, of which one—a medium-distance facility—should be common to all Convention ships in all areas.

2.2 The equipment needed in the system should be as reliable as possible, require minimum amount of maintenance and be easy to operate.

2.3 The procedures used should be internationally standardized and it is imperative that shore rescue facilities, coast stations, vessel reporting systems, search and rescue organizations and other terminal facilities be estab-

lished and coordinated into a network.

2.4 Ultimately the system should include reliable means for automatic alerting and position indicating.

2.5 However, any new system must be proven to be more reliable than the system it is intended to replace.

2.6 A future distress system should be evolved as a natural development of the present system.

II. NEAR FUTURE DISTRESS SYSTEM

3. Proposed Improvements for the Near Future

3.1 During the transition to a future distress system it is necessary to maintain existing provisions of the International Convention for the Safety of Life at Sea to ensure a reliable distress system for ships fitted with both existing and new equipment. The present provisions for 500-kHz, 2,182-kHz, HF, and VHF are the foundation upon which consideration is based. In addition to im-

¹ In this context "Convention ships" are those fitted with radio equipment in accordance with the provisions of the International Convention for the Safety of Life at Sea, in force.

proving these, recommendations for new provisions are listed below.

3.2 The following evolutionary, technically feasible and practical steps should be taken to augment the present system. It is recommended as a matter of urgency that:

(a) Administrations require that all ships under their jurisdiction compulsorily equipped with radiotelegraph installations be fitted with 2-MHz radiotelephone transmitting and receiving equipment, including watch receivers, as specified in Resolutions A.205(VII) and A.217(VII), for the purpose of providing early and effective linkage between the 500-kHz and 2,182-kHz distress systems;

(b) the frequency 156.8 MHz be designated the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service.²

It is further recommended that Administrations consider the early implementation of 156.8 MHz for distress and safety purposes, where short-range facilities are required and that ship stations should where practicable, maintain watch on 156.8 MHz for receiving by any appropriate means distress, safety and calling signals, where this can be achieved without prejudice to ships' needs:

(c) the carriage of emergency position-indicating radio beacons (EPIRB's) operating on 2,182 kHz and/or 121.5 MHz and/or 243 MHz be required in accordance with Resolution A.217(VII). Note also Resolution A.91(IV) EPIRBs on very high frequencies should preferably operate on both 121.5 and 243 MHz;

(d) the selective calling system which meets the requirements of the Radio Regulations be implemented;

(e) the use of the high-frequency spectrum for safety purposes be encouraged. In addition to the normal means of distress, alerting, and communications, vessels maintaining HF

communications with coast stations are urged to utilize this alternative means of alerting and communicating with respect to distress incidents, particularly when outside the normal communications range of 500 kHz, 2,182 kHz, or 156.8 MHz. In this connexion the attention of Administrations is drawn to Radio Regulation No. 1381;

(f) equipment performance and reliability be improved. Telecommunication equipment used for safety should be designed, instruction manuals prepared, and test equipment provided, so as to improve reliability and to facilitate maintenance at sea;

(g) the training of radio officers and radio operators be expanded. Radio officers and radio operators should be given appropriate training, according to their differing technical backgrounds, in maintenance and repairs at sea of the telecommunications and other electronic navigation equipment involved in the safety of life at sea. In addition, all crew members should be trained in the use of lifeboat and survival craft radio equipment;

(h) wider participation of vessels and coast stations in vessel position-reporting systems should be further encouraged;

(i) all Convention ships be fitted with maritime VHF facilities;

(j) the radiotelephone coast station distress coverage in those regions where it is at present inadequate be improved;

(k) the measures for improving the effectiveness of 2,182 kHz set forth in Resolution A.217(VII) be implemented as far as possible;

(1) adequate frequencies must be made available in all maritime bands for calling purposes and the transmission of urgency and safety messages. In particular in congested areas the transmission of urgency and safety messages by coast stations should be co-ordinated by Administrations concerned and preferably be done by selected coast stations, by means of "safety broadcasts".

3.3 The proposals constitute an integrated programme to improve the maritime distress system on the basis of the existing and presently anticipated technology and regulatory situation.

3.4 Administrations are also urged to put into effect those items that can be accomplished by administrative action.

III. DISTANT FUTURE DISTRESS SYSTEM

4. General

4.1 A distress system in a distant future should evolve as a natural development of the near future distress system and should include improved telecommunications facilities as they become available.

4.2 Elements of the near future distress system should be augmented and, if necessary, be replaced or simplified when more effective measures, methods or techniques become available. These should however be subjected to adequate practical testing to ensure that they meet all the requirements.

4.3 A maritime satellite system will be an important resource of the distant future distress system. While the primary role of satellite communications will be public correspondence, the fact that such communications exist will improve safety.

5. Requirements

5.1 (a) Even with the advent of satellite and automatic communications, the need will remain for some terrestrial and conventional methods of communications between ships, from ship-to-shore, and between ships and aircraft.

Conventional terrestrial communications would then still provide, on a mandatory or voluntary basis, the following functions for the maritime service:

(i) For non-satellite equipped ships—all communications services;

(ii) Complementary or supplementary services, such as short-range communications and distress in the maritime 500-kHz, 2-MHz, and VHF

² Note concerning WARC 1974: It is recommended to Member Governments that specific changes be made in the Radio Regulations noting that the WARC 1974 will be the only opportunity for several years for the maritime mobile service to improve its international status in the Radio Regulations with respect to other radio services.

bands, and as necessary, long-range communications via HF bands, during the transition period and for an undetermined period thereafter;

(iii) Linkage between satellite-equipped ships and non-satellite-equipped vessels.

These factors underscore the need for close integration between satellite and terrestrial communications facilities and systems, aboard ship.

(b) The system should provide for a ship-to-shore and shore-to-ship relaying capability by means of satellites as such facilities become available, especially for regions outside the MF coverage from land.

5.2 The system should also provide for the possible future fitting of automatic distress alerting, followed by the automatic transmission of essential additional information, such as identity of the vessel in distress, its position and the nature of the distress case, preferably transmitted in a standard format.

5.3 The system should further provide for supplementary ship-to-shore, shore-to-ship and ship-to-ship channels for the purpose of locating, coordinating and expediting assistance, including communications for search and rescue and "on-scene" operations.

5.4 Adequate frequencies must be available in all maritime bands for calling purposes and the transmission of urgency and safety messages with a continuing need for coordination in congested areas and in satellite systems.

5.5 Vessel position-reporting systems, where established, should provide for vessels to report their positions by automatic means to a centralized computer facility by either satellite or terrestrial means.

5.6 A coordinated distress and search and rescue communications network for maritime and aeronautical distress should be provided, with the necessary interconnections among appropriate SAR organizations, such as rescue co-ordination centres, vessel reporting centres, terrestrial coast stations and satellite ground stations.

5.7 The training of radio officers and radio operators should be further expanded, as appropriate, to ensure continued and adequate maintenance and repairs at sea of the telecommunications and other electronic navigation equipment involved in the safety of life at sea.

6. PROPOSED TRANSITIONAL MEASURES

6.1 During the transition to a distress system in the distant future it will be necessary to review and, if necessary, to modify the existing provisions of the Safety Convention.

6.2 The implementation of satellite communications could meet certain requirements for a future distress system, in particular for ship-to-shore alerting, locating, coordination and long-distance search and rescue communications. These satellite communication facilities should remain supplementary to ship-to-ship alerting and "on-scene" communications, on terrestrial channels. Further studies regarding the additional uses of satellite communication in a future distress system will be necessary and should be included in the proposals for a maritime satellite system.

6.3 The need for a single medium-range distress frequency exclusively reserved for distress purposes should be studied in the light of continuing

technological developments and the associated requirements for safety and calling.

6.4 In addition to the improvements proposed in the near future distress system the following steps should be taken in preparing a distress system in the distant future:

(a) Provisions for maritime terrestrial and/or satellite communication should be made for supplementary ship-to-ship and shore-to-ship communications; this would achieve the purpose of locating, coordinating and expediting assistance, including communications for search and rescue.

(b) Provisions should be made for ship-to-ship and ship-to-aircraft communications for "on-scene" operations, taking due regard of the provisions in the Radio Regulations which permit this type of terrestrial communication in the 1,535 to 1,660-MHz band, in addition to the MF, HF, and VHF bands.

(c) The introduction of a general purpose selective calling system, capable of facilitating the transmission and reception of all communications, should be expedited.

IV. IMPLEMENTATION

7. (a) It is intended that, where practicable, steps in the near future distress system will be introduced into the existing system as soon as possible, through whatever procedure is appropriate.

(b) It is intended that, where practicable, steps in the distant future distress system will be introduced in the near future distress system, whenever the introduction of new measures, methods or techniques will make this technically feasible and possible.



COAST GUARD RULEMAKING

(Status as of 1 February 1974)

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
1972 PUBLIC HEARING							
Tailshaft inspection and drawing (67-71, 4-71).....	3-1-72	3-27-72	4-3-72	X			
Portable foam firefighting equipment—tank vessels (17-71).....	3-1-72	3-27-72	4-3-72	X			
ANCHORAGE REGULATIONS							
Casco Bay, Maine (CGD 72-103).....	6-16-72		7-19-72			12-5-73	1-7-74
Henderson Harbor, NY (CGD 74-6).....	1-11-74		2-15-74	X			
St. John's River, Fla. (CGFR 71-162).....	12-22-71		1-31-72			12-5-73	1-7-74
San Juan Harbor, P.R. (CGFR 72-12).....	2-1-72		3-4-72	X			
Wilmington River, Ga. (CGD-259).....	11-25-71		12-27-71	X			
San Diego Harbor (CGD 72-228).....	12-5-72		1-8-73	X			
Juan De Fuca, Wash. (CGD 72-233).....	12-5-72		1-9-73	X			
Chester River, Md. (CGD 73-10).....	1-19-73		2-27-73			12-10-73	1-11-74
Milwaukee Harbor, WI (CGD 73-48).....	3-19-73		4-16-73	X			
Barbers Point, Oahu, HI (CGD 73-59).....	3-30-73		4-20-73			6-26-73	7-6-73
Sodus Bay, NY (CGD 73-84).....	4-27-73		5-29-73	X			
Oyster Bay, NY (CGD 73-126).....	6-19-73		7-20-73			10-31-73	11-30-73
Potts Harbor, ME (CGD 73-124).....	6-19-73		7-20-73	X			
Puget Sound Area, WA (CGD 73-180).....	8-24-73		9-28-73	X			
North East, MD (CGD 73-189).....	11-29-73		12-31-73	X			
Delaware Bay and R. (CGD 73-190).....	12-28-73		2-15-73				
BOATING SAFETY (GENERAL)							
Termination of unique vessels (CGD 73-40).....	3-14-73	5-8-73	5-14-73	X			
Hazardous bar areas (CGD 73-41).....	3-14-73	4-17 & 19-73	5-1-73			1-23-74	2-22-74
BRIDGE REGULATIONS							
Nansemond R., Va. (CGD 72-224).....	11-11-72		12-15-72	X			
John Day R., Blind Slough, Clatskanie R., Oregon (CGD 72-231).....	11-28-72		1-2-73	X			
Nanticoke, Del. (CGFR 71-142).....	11-24-71		12-24-71	X			
Ogden Slip, Chicago, Ill. (CGFR 72-16).....	2-2-72		3-7-72	X			
Sacramento River, Cal. (CGFR 71-165).....	12-29-71		2-7-72			8-26-72	10-1-72
Pascagoula R. MS (CGD 73-140).....						12-6-73	12-1-73 through 4-15-74
Sacramento R. et. al. CA (CGD 73-142).....	7-20-73		8-21-73	X			
Lechmere Canal MA (CGD 73-163).....	8-10-73		9-11-73			1-11-74	2-11-74
Westchester Ck. NY (CGD 73-166).....	8-10-73		9-11-73	X			
Cheesquake Ck. NJ (CGD 73-162).....	8-10-73		9-11-73	X			
Green R. KY (CGD 73-171).....	8-21-73		9-25-73	X			
AIWW, Mile 342, Fla.; Drawbridge Operations (CGD 72-190P).....	9-30-72		11-1-72	X			
Spa Creek, MD (CGD 73-13).....	1-26-73		3-6-73			1-25-74	4-1-74
Long Island Inland Waterway (CGD 73-23).....	2-12-73		3-30-73	X			
Shaws Cove, CT (CGD 73-72).....	4-18-73		5-18-73	X			
Scuppernong R., NC (CGD 73-111).....	5-1-73		7-3-73	X			
Rahway R., NJ (CGD 73-196).....	5-29-73		10-16-73	X			
Alabama R., AL (CGD 73-195).....	9-11-73		10-16-73	X			
Ashpoo R., SC (CGD 73-198).....	9-11-73		10-16-73	X			
Red River LA & AR (CGD 73-197).....	9-11-73		10-16-73	X			
Corte Madera CK, CA (CGD 73-199).....	9-11-73		10-16-73	X			
Gulf Intracoastal Waterway, FL (CGD 73-204).....						9-13-73	8-15-73 through 3-1-74

Coast Guard Rulemaking—Continued

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Genesee R., NY (CGD 73-203).....	9-13-73		10-16-73	×			
Navigable Waters in LA (CGD 73-214)	9-27-73		10-30-73	×			
Puyallup R., WA (CGD 73-215).....	10-3-73		11-6-73	×			
Stony Ck., MD (CGD 73-242).....	10-12-73		11-20-73	×			
Lake Washington Ship Canal, WA (CGD 73-255).....	11-13-73		12-18-73	×			
Lake Champlain, VT (CGD 74-10).....						1-17-74	1-18-74
Shellbank Basin, NY (CGD 74-11).....						1-17-74	1-18-74
Bridge Locations & Clearances, Administrative procedures (CFD 73-268).....						1-21-74	1-22-74
Copper R., NJ (CGD 74-17).....	1-23-74		2-19-74				
AIWW, Hillsboro Inlet, FL (CGD 74-22).....	1-25-74		3-1-74				
HAZARDOUS MATERIALS							
Dichlorobutene, Corrected, F.R. 9-20-72, Hazardous Cargoes (CGD 72-162PH).....	8-30-72	10-24-72	10-31-72	×			
Certification of Cargo Containers for Transport under Customs Seal (CGD 72-139).....	11-17-72		12-19-72	×			
Miscellaneous Dangerous Cargoes (CGD 72-182).....	11-11-72	12-12-72	12-19-72	×			
Marking of radioactive materials packages (CGD 73-137).....	8-31-73	9-25-73	10-5-73	×			
Dangerous Cargoes, miscellaneous amendments (CGD 73-173).....	9-5-73	9-25-73	10-5-73	×			
Dangerous Cargo Regulations, miscellaneous (CGD 73-249).....	1-16-74		3-4-74				
Letters of Compliance for Certain Bulk Dangerous Cargoes; interim regulations (CGD 73-282).....						1-11-74	1-11-74
MARINE ENVIRONMENT AND SYSTEMS (GENERAL)							
Oil pollution prevention (CGFR 71-160, 161).....	12-24-71	2-15-72	4-21-72	×		12-21-72	7-1-74 ¹
Marine Sanitation Devices (CGD 73-83).....	Adv. 6-18-73		8-15-73	×			
Vessel traffic system, Puget Sound (CGD 73-158).....	8-6-73	8-30-73	9-17-73	×			
Security Zone, New London CT (CGD 73-182).....	8-23-73 corrected 9-4-73		9-28-73	×			
Chesapeake Bay entrance (CGD 73-152).....	12-18-73	2-11-74	1-23-74			1-23-74	1-23-74
Description of Atlantic & Pacific Areas (CGD 73-102).....							
MERCHANT MARINE SAFETY (GENERAL)							
Compressed Gas Cylinders (CGD 72-115PH).....	8-31-72	9-28-72	10-2-72	×			
Oceanographic vessels, fire main systems (CGFR 72-20).....	2-4-72		3-19-72	×			
Water lights, floating electric (CGFR 72-48).....	3-9-72	4-18-72	4-24-72	×			
Great Lakes Maritime Academy, List as a Nautical School-Ship (CGD 72-92P).....	8-9-72		9-15-72	×			
Ship's Maneuvering Characteristics Data (CGD 72-134PH).....	8-22-72 Supp. 7-20-73	9-28-72	10-13-72	×			
Unmanned Barges; hull construction (CGD 72-130).....	10-31-72	12-19-72	12-29-72	×			
Construction requirements for tank ships (CGD 72-245).....	Adv. 1-26-73 Supp. 7-5-73		3-15-73				
Emergency Position Indicating Radio Beacons (CGD 73-24).....	3-5-73	4-18-73	4-30-73	×			

¹ Various effective dates precede that indicated. See Federal Registers of 12-21-72 and 8-24-73;

Coast Guard Rulemaking—Continued

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Firemen's outfits on manned tank barges (CGD 73-11)...	4-26-73	On request	5-28-73	X			
Dry chemical fire extinguisher requirements (CGD 73-73).....	6-8-73		7-10-73	X			
Great Lakes pilot rules (CGD 73-100).....	8-1-73		9-3-73	X			
Lifeboat winches for merchant vessels (CGD 73-103)....	8-21-73		9-28-73	X			
Lifesaving equipment specification (CGD 73-130).....	8-28-73		9-28-73	X			
	Supp. Notice						
Inflatable liferafts (CGD 73-160).....	1-16-74		2-16-74				
Lifeboats for merchant vessels (CGD 73-116).....	9-27-73		10-31-73	X			
Radar observer licensing (CGD 73-238).....	10-3-73		11-2-73	X			
Pressure vessels (CGD 73-133).....	10-12-73		11-30-73	X			
Portable tanks (CGD 73-172).....	10-12-73		11-16-73	X			
	12-5-73	1-15-74 New Orleans	1-21-74				
Marine engineering amendments (CGD 73-248).....	12-11-73		1-14-74				
Unmanned Platforms (CGD 73-177).....	1-8-74		2-25-74				
	Corrected 1-29-74						
Releases, Lifesaving Equipment, Hydraulic and Manual (CGD 73-153).....	1-8-74		2-25-74				
Light Intensity Standards (CGD 74-7).....						1-25-74	7-1-74

NOTE: This table which will be continued in future issues of the Proceedings is designed to provide the maritime public with better information on the status of changes to the Code of Federal Regulations made under authority granted the Coast Guard. Only those proposals which have appeared in the Federal Register as Notices of Proposed Rulemaking, and as rules will be recorded. Proposed changes which have not been placed formally before the public will not be included.

AMENDMENTS TO REGULATIONS

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of Transportation

SUBCHAPTER A—GENERAL

[CGD 73-102]

PART 3—COAST GUARD AREAS, DISTRICTS, MARINE INSPECTION ZONES, AND CAPTAIN OF THE PORT AREAS

Description of Atlantic and Pacific Areas

These amendments change the names and revise the geographic descriptions of the two Coast Guard Areas contained in the present struc-

ture of the general organization of the Coast Guard.

In each of the three sections amended by this document the Eastern Area and the Western Area are renamed to be the Atlantic Area and Pacific Area respectively. Section 3.04-1(b) is further amended by including the Second and Ninth Coast Guard Districts in the description of the Atlantic Area and by revising the geographic description of the ocean area included in the Atlantic Area. Section 3.04-3(b) is further amended by revising the geographic description of the ocean area included in the Pacific Area.

Since these amendments are matters relating to agency organization, they are exempt from the notice of proposed rulemaking requirements in

5 U.S.C. 553(b). They are effective in less than 30 days from the date of publication because the organizational changes described in the amendments have already been implemented.

In accordance with the foregoing, Part 3 of 33 CFR Chapter I is amended as follows:

1. Subpart 3.01 is amended by revising § 3.01-1(b) to read as follows:

§ 3.01-1 General description.

* * * * *

(b) The two Coast Guard Areas are the Atlantic Area (see § 3.04-1 of this part) and the Pacific Area (see § 3.04-3 of this part). The Coast Guard Area Commander is in command of a Coast Guard Area and his

offices may be referred to as a Coast Guard Area Office. The office of the Commander, Atlantic Area is located in the Third Coast Guard District and the Commander of that District shall serve collaterally as Commander, Atlantic Area. The office of the Commander, Pacific Area is located in the Twelfth Coast Guard District and the Commander of that District shall serve collaterally as Commander, Pacific Area. Area Commanders have the responsibility of determining when operational matters require the coordination of forces and facilities of more than one district.

* * * * *

2. Subpart 3.04 is amended by revising § 3.04-1(b) to read as follows:

§ 3.04-1 Atlantic Area.

(b) The Atlantic Area shall comprise the land areas and U.S. navigable waters of the First, Second, Third, Fifth, Seventh, Eighth and Ninth Coast Guard Districts and the ocean areas lying east of a line extending from the North Pole south along 95° W longitude to the North American land mass; thence along the west coast of the North, Central, and South American land mass to the intersection with 70°W longitude; thence due south to the South Pole. These waters extend east to the Eastern Hemisphere dividing line between the Atlantic and Pacific Areas which lies along a line extending from the North Pole south along 100°E longitude to the Asian land mass and along a line extending from the South Pole north along 62°E longitude to the Asian land mass.

3. Subpart 3.04 is further amended by revising § 3.04-3(b) to read as follows:

§ 3.04-3 Pacific Area.

* * * * *

(b) The Pacific Area shall comprise the land areas and the U.S. navigable waters of the Eleventh, Twelfth, Thirteenth, Fourteenth and Seventeenth Coast Guard Districts

and the ocean areas lying west of a line extending from the North Pole south along 95°W longitude to the North American land mass; thence along the west coast of the North, Central and South American land mass to the intersection with 70°W longitude; thence due south to the South Pole. These waters extend west to the Eastern Hemisphere dividing line between the Atlantic and Pacific Areas which lies along a line extending from the North Pole south along 100°E longitude to the Asian land mass and along a line extending from the South Pole north along 62°E longitude to the Asian land mass.

(80 Stat. 383, as amended (5 U.S.C. 552); 63 Stat. 545 (14 U.S.C. 633); 80 Stat. 937 (49 U.S.C. 1655 (b)); 49 CFR 1.45 and 1.46)

Effective date: January 23, 1974.

(Federal Register of Jan. 23, 1974.)

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of Transportation

SUBCHAPTER C—UNINSPECTED VESSELS [CGD 74-7R]

PART 25—REQUIREMENTS

SUBCHAPTER T—SMALL PASSENGER VESSELS (UNDER 100 GROSS TONS)

PART 184 VESSEL CONTROL AND MISCELLANEOUS SYSTEMS EQUIPMENT

Light Intensity Standards

On December 27, 1967 (32 FR 20812), the Coast Guard promulgated an amendment to Parts 25 and 184 of Title 46, Code of Federal Regulations by adding new §§ 25.05-15 and 184.15-5 light intensity standards. These sections contain information pertaining to the distance of visibility of navigation lights. Sections 25.05-15(a) and 184.15-5(a) provide an intensity standard which corresponds to the required distances of visibility.

Sections 25.05-15(b), 25.05-15(c), 184.15-5(b), and 184.15-5(c), in associated tables, provide combinations of lamps and lenses which could be used to achieve the standard in-

tensity. This information might be misinterpreted to imply that the listed combinations are the most effective, or most efficient available or that the intensity standard could not be met by other combinations. Therefore, these sections are being removed.

Sections 25.05-15(d) and 184.15-5(d) include the sentence "Such lights shall be of an approved type." This implied that an approval specification for navigation lights would be issued. A specification has not been issued due to difficulties encountered in specifying all conditions required to comply with the Rules of the Road while recognizing physical limitations of light sources which exist. With no specifications, lights cannot be approved. Therefore, the requirement is being removed.

It is reasonable that navigation light manufacturers delayed development and manufacture of new lights pending the publishing of specifications. Therefore, lights which provide the standard intensities may not be available for every different style, type and size of vessel to which these standards apply and the effective date must be deferred.

The amendments in this document delete the recommended lamp and lens tables, delete the requirement for a light of an approved type and extend the effective date for compliance with the light intensity standards from January 1, 1974 to July 1, 1974. The amendments do not alter the obligation of any person to comply with any applicable Rules of the Road.

Since these amendments remove a recommendation and provide additional time for compliance with a specified intensity standard imposing no additional burden on any person, notice and public procedure thereon are unnecessary and the amendments may be made effective in less than 30 days.

* * * * *

(The complete text of these amendments was published in the Federal Register of January 25, 1974.)

MERCHANT MARINE SAFETY PUBLICATIONS

The following publications of marine safety rules and regulations may be obtained from the nearest marine inspection office of the U.S. Coast Guard. Because changes to the rules and regulations are made from time to time, these publications, between revisions, must be kept current by the individual consulting the latest applicable Federal Register. (Official changes to all Federal rules and regulations are published in the Federal Register, printed daily except Saturday, Sunday, and holidays.) The date of each Coast Guard publication in the table below is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

The Federal Register will be furnished by mail to subscribers, free of postage, for \$5.00 per month or \$45 per year, payable in advance. The charge for individual copies is 75 cents for each issue, or 75 cents for each group of pages as actually bound. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated October 1, 1972 are now available from the Superintendent of Documents price: \$5.75

CG No.	TITLE OF PUBLICATION
101	Specimen Examination for Merchant Marine Deck Officers (7-1-63).
101-1	Specimen Examinations for Merchant Marine Deck Officers (2d and 3d mate) (10-1-73).
108	Rules and Regulations for Military Explosives and Hazardous Munitions (4-1-72). F.R. 7-21-72, 12-1-72.
115	Marine Engineering Regulations (6-1-73) F.R. 6-29-73.
123	Rules and Regulations for Tank Vessels (1-1-73). F.R. 8-24-73, 10-3-73, 10-24-73.
129	Proceedings of the Marine Safety Council (Monthly).
169	Rules of the Road—International—Inland (8-1-72). F.R. 9-12-72.
172	Rules of the Road—Great Lakes (7-1-72). F.R. 10-6-72, 11-4-72, 1-16-73, 1-29-73, 5-8-73.
174	A Manual for the Safe Handling of Inflammable and Combustible Liquids (3-2-64).
175	Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3-1-73).
176	Load Line Regulations (2-1-71) F.R. 10-1-71, 5-10-73.
182	Specimen Examinations for Merchant Marine Engineer Licenses (7-1-63).
182-1	Specimen Examinations for Merchant Marine Engineer Licenses (2d and 3d Assistant) (10-1-73).
184	Rules of the Road—Western Rivers (8-1-72). F.R. 9-12-72, 5-8-73.
190	Equipment List (8-1-72). F.R. 8-9-72, 8-11-72, 8-21-72, 9-14-72, 10-19-72, 11-8-72, 12-5-72, 1-15-73, 2-6-73, 2-26-73, 3-27-73, 4-3-73, 4-26-73, 6-1-73, 8-1-73, 10-5-73, 11-26-73, 1-17-74.
191	Rules and Regulations for Licensing and Certification of Merchant Marine Personnel (6-1-72). F.R. 12-21-72, 3-2-73, 3-5-73, 5-8-73, 5-11-73, 5-24-73, 8-24-73, 10-24-73.
200	Marine Investigation Regulations and Suspension and Revocation Proceedings (5-1-67). F.R. 3-30-68, 4-30-70, 10-20-70, 7-18-72, 4-24-73, 11-26-73, 12-17-73.
227	Laws Governing Marine Inspection (3-1-65).
239	Security of Vessels and Waterfront Facilities (3-1-72). F.R. 5-31-72, 11-3-72, 7-8-72, 1-5-73, 1-23-74.
256	Rules and Regulations for Passenger Vessels (5-1-69). F.R. 10-29-69, 2-25-70, 4-30-70, 6-17-70, 10-31-70, 12-30-70, 3-9-72, 7-18-72, 10-4-72, 10-14-72, 12-21-72, 4-10-73, 8-1-73, 10-24-73, 12-5-73.
257	Rules and Regulations for Cargo and Miscellaneous Vessels (4-3-73). F.R. 6-28-73, 6-29-73, 8-1-73, 10-24-73.
258	Rules and Regulations for Uninspected Vessels (5-1-70). F.R. 1-8-73, 3-28-73, 1-25-74.
259	Electrical Engineering Regulations (6-1-71). F.R. 3-8-72, 3-9-72, 8-16-72, 8-24-73, 11-29-73.
266	Rules and Regulations for Bulk Grain Cargoes (5-1-68). F.R. 12-4-69.
268	Rules and Regulations for Manning of Vessels (10-1-71). F.R. 1-13-72, 3-2-73.
293	Miscellaneous Electrical Equipment List (7-2-73).
320	Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (7-1-72). F.R. 7-8-72.
323	Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (9-1-73). F.R. 1-25-74.
329	Fire Fighting Manual for Tank Vessels (7-1-68).
439	Bridge-to-Bridge Radiotelephone Communications (12-1-72).

CHANGES PUBLISHED DURING JANUARY 1974

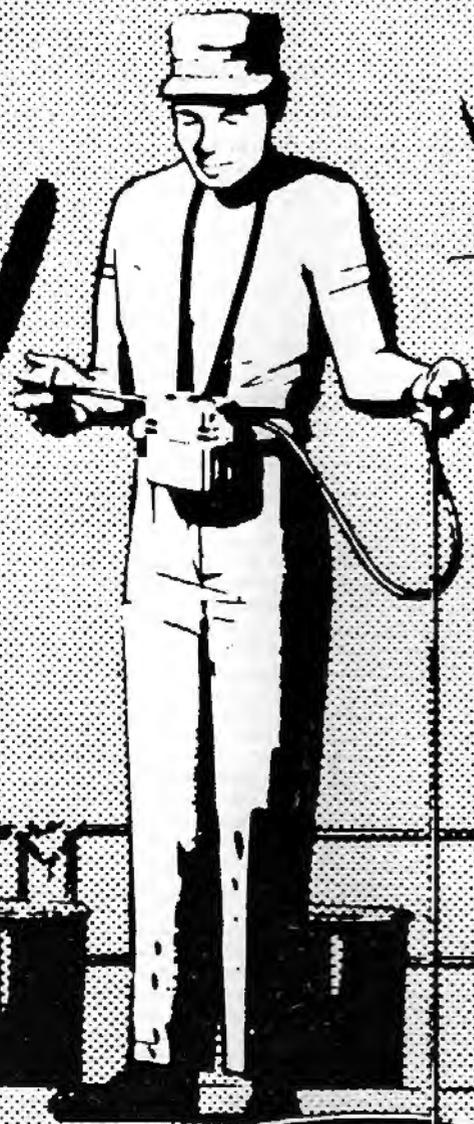
The following have been modified by Federal Registers:

CG-190, Federal Register of January 17, 1974.

CG-239, Federal Register of January 23, 1974.

CG-258 and CG-323, Federal Register of January 25, 1974.

PLAY IT SAFE!



**Don't enter tanks
and compartments until
they have been thoroughly
ventilated and tested.**